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CCSS Standards for Mathematical Practice Placemat

1 Make sense of problems and persevere in solving them. *Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution.*	**2 Reason abstractly and quantitatively.** *Mathematically proficient students make sense of quantities and their relationships in problem situations.*
3 Construct viable arguments and critique the reasoning of others. *Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments.*	**4 Model with mathematics.** *Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.*
5 Use appropriate tools strategically. *Mathematically proficient students consider the available tools when solving a mathematical problem.*	**6 Attend to precision.** *Mathematically proficient students try to communicate precisely to others.*
7 Look for and make use of structure. *Mathematically proficient students look closely to discern a pattern or structure.*	**8 Look for and express regularity in repeated reasoning.** *Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts.*

CCSS Standards for Mathematical Practice Mini-Vignettes

A. Noah is building triangles. He says, "The longest side cannot be more than the other two sides." Nick says, "It can't be the same as the two sides either." Amy says, "Yes, they can be the same, just not greater." Maria says, "No, if the long side was the same then the two other sides would stretch out flat, it has to be smaller, even if only by a tiny amount."	**E.** Rachel is looking at the cost of movie tickets for adults and children. She is listing the various costs for groups going to the movies. She realizes that an equation would help her with this work and writes the formula: Cost = $\$5c + \$7a$
B. To solve $\frac{3}{4} + \frac{3}{8}$, Mindy decides to use a number line. She starts at $\frac{3}{4}$, which is also $\frac{6}{8}$, jumps up $\frac{2}{8}$ to get to 1, and then one more eighth to get to $1\frac{1}{8}$.	**F.** Lin and Ben are working on describing what makes a rhombus a rhombus. Lin says, "All the sides are the same." Ben says, but that is true for an equilateral triangle, too. Lin pauses and adds to his description, "It is a quadrilateral with four equal sides."
C. In working on expressions such as, 6 x 3 x 5, Zoe realizes that she gets the same answer if she multiplies 6 x 5 x 3, which is easier to do in her head. She realizes that this will always work because each of these factors could be the measures of the sides of a box, which can be in any position.	**G.** The class is working on integer operations on the number line. They solve problems like: $-3 + 14 =$ __; $-15 + -10 =$ __; $21 + -30=$ __. Kelly notices that whenever the signs are different she 'jumps' back to zero and then 'jumps' the rest of the distance (e.g., for $-3 + 14$, she jumps +3 to zero and then up to 11). She notices that this answer looks like the difference of 14 and 3 and uses this idea to solve other problems.
D. Anna is trying to find the area of an unusually shaped garden. She thinks about a simpler problem of a rectangular garden. She partitions the garden into familiar shapes to solve the task. As she works she monitors and evaluates her progress and adapts her strategy when it doesn't seem to be working.	**H.** Ricky is working on addition strategies. He looks at 8 + 7 and decides to use the context of his toy cars to think about the problem. He recognizes that 8 cars is 5 cars and 3 more and 7 cars is 5 cars and 2 more. He pictures the cars lined up in fives and solves the problem by adding 5 + 5 + 5.